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ON THE FOSSIL GENUS POROCYSTIS, CRAGIN.¹

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Under the name of *Porocystis pruniformis* F. W. Cragin described in 1892, in the Fourth Annual Report of the Geological Survey of Texas, curious spherical forms from the Cretaceous of Texas. In regard to the geological levels at which they were collected, he states: "In chalky limestones of the alternating beds in Travis, Burnet, Williamson, Lampasas and other counties, associated with *Serpula*, small *Ostreidæ*, and other forms indicative of moderate depth of water. In the Third Annual Report of the Survey, Mr. Taff has also recorded it from rocks of the Fredericksburg division of the Hickory-Cow Creek divide, Travis County, associated with several fossils of the *Exogyra Texana* beds."

Cragin considered that these fossils were Bryozoa, and speaks of having sent some to the late Dr. Ferdinand Roemer, who returned them marked "*? Parkeria*, sp. nov." His figures of them are not detailed, and for this reason as also because they are evidently not Bryozoa, a new description seems called for. There is a large series of specimens in the University Museum, the greater number considerably eroded but some with the surface sculpturation well preserved.

The tests are more or less prolate spheroids, sometimes one axis much shorter than the other. At one point on the surface is a flattened, very slightly protuberant area, free of any sculpturation, which might represent either the point of attachment of a stalk, or have been a large foramen. For various considerations it is probably the latter, so that the whole fossil proper would be a hollow spheroid with very thin shell and with a large opening at one end. The interior of each fossil is a mass of structureless limestone. This flattened area, or foramen as it may preferably be called, is usually upon the edge or very near it, when the specimen is much flattened, but in one of such cases it is in the center of the flat side. Canals radiate from the fora-

¹ Contributions from the Zoölogical Laboratory of the University of Texas, no. 70.

men, and the whole surface is covered with ridges and depressions.

The usual surface sculpturation consists of rather irregular rows of approximately oval or circular depressions the centers of

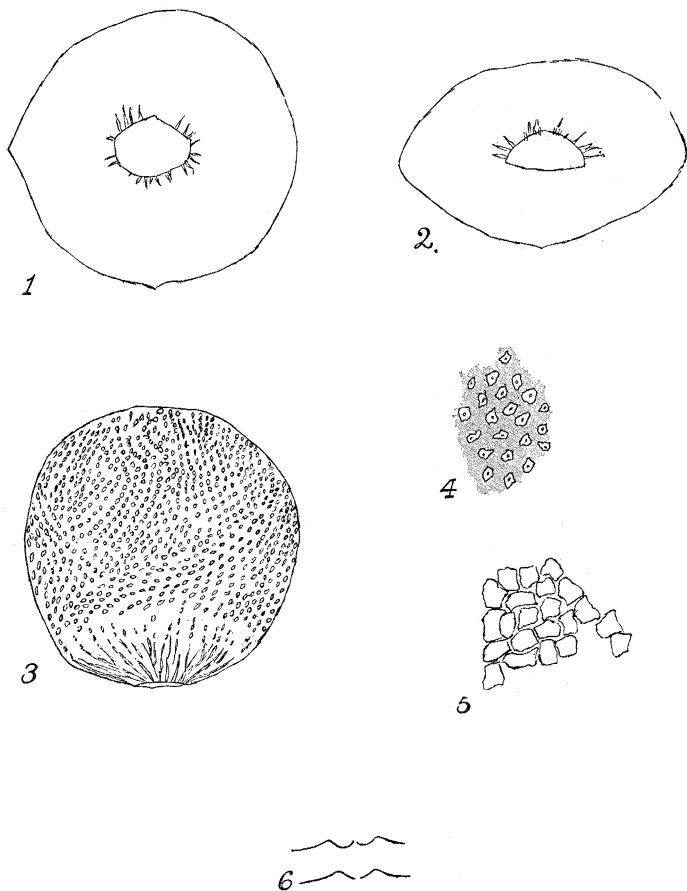


FIG. 1. Medium-sized specimen, showing general form, foramen and radiating canals.

FIG. 2. Specimen with one short axis, diameter 12 by 19 mm.

FIG. 3. Medium-sized specimen, diameter 18 by 18 mm.

FIGS. 4, 5. Different types of surface sculpturation.

FIG. 6. Ideal cross-section of test alone.

which are in some specimens raised into papillæ (Fig. 4). Some have flat scar-like white areas with traces of the more prevalent sculpturation (Fig. 5). Others have raised areas of the same

shape and arrangement ; these seem to indicate an erosion of the ridges and the papillæ. In some, again, the ridges have worn away, leaving only the papillæ, but the arrangement of these is as in the other cases. At the summit of each papilla, or at the center of each depressed area, is a minute foramen penetrating the wall of the test.

Fig. 7 shows the structure in ideal cross section. The whole interior is filled completely with foreign, calcareous substance, containing fragments of sponge spicules.

In no one specimen is the sculpturation preserved over the entire fossil, but a comparison of the different ones shows that the test in life, except just around the foramen, must have been so sculptured. The radial canals around the foramen are usually continued upwards as rows of minute depressions. Possibly such radial canals were not present in life, but produced by erosion of the exterior.

Measurements. — The largest specimens have a diameter of 25×31 mm. ; smaller ones from 9 to 18 mm. The large basal foramen measures from 4 to 7 mm. across.

These fossils present few good characteristics to enable one to decide what their nature was. But there is no resemblance, as Cragin had supposed, to Bryozoa, for even in a colonial ectoproctous Bryozoan the cysts of the separate individuals are more or less cylindrical, and there is no sign at all of any such structures. Evidently the structure is that of a very thin shell or test, without prolongations into the interior, with a large opening at one end and rows of numerous minute foramina elsewhere upon the surface. This general appearance suggests that it is a gigantic monothalamnian Foraminifer that in the course of fossilization has become infiltrated so as to be quite solid. Were it Bryozoan there should be present traces of skeletal parts within the test.